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surface 56 of the base 20. On the other hand, as seen in FIG. 7, when the computer 10 is closed, the sliding member 68 is pushed over the opening 52 of the recess 50 and that forces the antenna 32 inside the recess. When the computer 10 is opened again, the sliding member 68 is retracted from the opening 52 and the antenna 32 resiliently returns to the second position 48 to facilitate wireless communication.

Alternatively, the antenna 32 may be constructed so that it is normally in the first position 46 and it is attached to the computer 10 such that it protrudes normal to the upper surface 56 of the base 20 when the computer is in the open position. The closing of the computer 10 pushes the sliding member 68 over the opening 52 and that forces the antenna 32 into the recess 50.

Another embodiment of the antenna system 12 is shown in FIG. 8. In this embodiment, a lever 80 is used to position the antenna 32 within the recess 50 when desired by the user. In particular, the lever 80 is configured to be rotated by the user and the rotation of the lever causes the antenna 32 to move into the recess 50 in the base 20. As shown in the accompanying figures, rotation of the lever 80 in a counter-clockwise direction causes the antenna 32 to be pivoted upwardly and when the lever is rotated in a clockwise direction, the antenna is pivoted into the recess 50. Advantageously, the movement of the antenna 32 by rotation of the lever 80 eliminates contact of the antenna with the housing 16 or other components of the computer 10, and this reduces wear caused by the contact of the antenna 32 with other components.

Yet another embodiment of the antenna system 12 is shown in FIG. 9. In this embodiment, the base 28 of the antenna 32 is attached to a wall forming the recess 50 in the computer housing 16. The antenna 32 is configured to extend generally perpendicular to the upper surface 54 of the base 20. When the display screen 24 is moved in the closed position, an engagement surface 90 on the display screen engages the free end 40 of the antenna 32 and forces the antenna into the recess 50. When the computer 10 is opened, the antenna 32 resiliently returns to its original generally vertical position.

In yet another embodiment, as shown in FIG. 10, the antenna 32 is manually movable between the use position and the storage position. Thus, when the computer 10 is opened, the antenna 32 stays within the recess 50 until the user desires to remove the antenna. Preferably, the user inserts his or her finger into cut-out section 100 to grasp the antenna 32 and pull it into the desired position. The antenna 32 remains in the desired position until the user manually returns the antenna to the recess 50. Advantageously, this allows the antenna 32 to remain in the storage position even when the computer is in the open position. A latch or catch 102 may also be used to hold the antenna 32 in the desired position.

As shown in FIG. 11, another preferred embodiment of the antenna 32 includes an indicator such as a light source 110 attached to the free end 40 of the antenna. The light source 110 may indicate the use of wireless communication system. Preferably, the light source 110 is a light emitting diode (LED), but any suitable light source may be used. The light source 110 is positioned at the free end 40 of the antenna 32 so that it is readily visible to others to indicate that the wireless communication system is in use. For example, airline personnel could quickly and easily determine that the wireless communication system is in use. This may be very useful because the Federal Aviation Administration (FAA) may require all portable computers 10 to have

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an indicator which denotes the use of the computer 10 or wireless communication system. It will be appreciated, however, that the light source may be positioned in any desired location and other types of indicators, such as sounds, may also be used. The light source 110 may also be used for other purposes such as a signal strength indicator which allows the user to optimize the portioning of the antenna 32.

In detail, the antenna 32 shown in FIG. 11 includes two elongated radiating elements 112 and 114 instead of a single radiating element 34. The first element 112 is a signal or power source for the light source 110 and the second element 114 is a ground source. The two elements 112 and 114 are separated by a dielectric material 116, and the elements are positioned proximate to each other to create either a dipole or monopole antenna.

In yet another embodiment of the present invention, as shown in FIG. 12, the computer 10 is configured to allow the antenna system 12 to be used and operated while in the closed position. As shown in FIG. 12, the antenna 32 may be pivoted or rotated laterally away from the computer housing 16 such that the antenna extends outwardly from the computer. In greater detail, the computer housing 16 includes an opening 120 with a cut-out section 122 which allows a user to manually grasp the antenna 32 and remove it from the recess 50 in the base 20 of the computer 10. The cut-out section 122 advantageously aids the user in removing the antenna 32 from recess 50. Thus, the antenna 32 is positioned to transmit and receive information while the computer 10 is in the closed position. Advantageously, this allows the antenna system 12 to be in contact with a wireless communication system even while the computer is in the closed position. For example, this allows the computer 10 to link to another computer for purpose such as updating or backing up the files on the portable computer. In addition, this may allow the computer 10 to be docked or coupled to a docking station while the computer is in the closed position.

Although this invention has been described in terms of certain preferred embodiments, the present invention may be embodied in other specific forms without departing from its spirit or essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. The scope of the invention is, therefore, indicated by the appended claims rather than by the foregoing description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within their scope.

What is claimed and desired to be secured by United States Letters Patent is:

1. An apparatus for establishing wireless communication between a portable computer and a communications network, said apparatus comprising:

a portable computer including a cover and a base unit, said base unit including an upper surface, a lower surface and side walls, said portable computer including an open position and a closed position;

an antenna including a first end and a second end, said first end being attached to said base unit of said portable computer in a generally fixed location relative to said upper surface of the base unit; and

a storage compartment in said base unit, said storage compartment being sized and configured to receive at least a portion of said antenna when said computer is in said closed position.

2. The apparatus of claim 1, wherein said antenna is attached proximate said upper surface of said base unit.